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PREVENTION OF THE PEDETIC OR BROWNIAN MOVEMENT IN MILK OR OTHER LIQUIDS WITH MINUTE OBJECTS IN SUSPENSION

By SIMON HENRY GAGE

For the purpose of photography or for measurement and counting it is very objectionable to have minute particles in constant motion. For several years efforts have been made to obviate this pedetic or Brownian movement, especially during the photographing of the globules of milk. None of the inhibitors of the movement described in the text-books proved at all satisfactory, but finally complete success was attained by mixing the milk with a dilute solution of gelatin. Various mixtures were tried, and all gave fairly good results, but the following proved entirely satisfactory:

Clear gelatin, like that used in bacteriology or for food..... 10 grams.
Distilled water 90 c.c.
Filter through filter paper.

If the gelatin is acid it may be neutralized with carbonate of soda. Neutralization is usually, however, unnecessary. This ten per cent gelatin solution is then mixed with the milk by placing a drop of the solution on a slide and adding to it a drop of the milk to be examined. With a scalpel the two are thoroughly mixed, and a cover added and pressed down to avoid too thick a stratum. The slide is then placed on a cake of ice or other cold body for fifteen minutes or more to set the mixture. For other liquids with suspended particles the preparation for examination is exactly the same.

When the preparation is examined the pedetic movement will not be found even in the smallest particles. The gelatin solution is so bland that it does not seem to injure the milk globules in the least. The only objectionable feature is a slight tendency to agglutinate the globules; but no such tendency was observed in the experiments made with other liquids containing suspended particles.